

Amendments to the Claims

This listing of claims will replace all prior listings of claims in the application:

Listing of Claims:

1. (Currently amended) A MHC Class I-restricted epitope peptide derived from survivin, said comprising an epitope peptide selected from SEQ ID NO: 1, SEQ ID NO: 4, SEQ ID NO: 5 and SEQ ID NO: 14 having at least one of the following characteristics:

~~—— (i) capable of binding to the Class I HLA molecule to which it is restricted at an affinity as measured by the amount of the peptide that is capable of half maximal recovery of the Class I HLA molecule (C_{50} value) which is at the most 50 μ M as determined by the assembly binding assay as described herein;~~

~~—— (ii) capable of eliciting $INF\ \gamma$ producing cells in a PBL population of a cancer patient at a frequency of at least 1 per 10^4 PBLs as determined by an ELISPOT assay, and/or~~

~~—— (iii) capable of *in situ* detection in a tumor tissue of CTLs that are reactive with the epitope peptide.~~

Claims 2-11. (Cancelled)

12. (Original) A peptide according to claim 1 comprising at the most 20 amino acid residues.

13. (Original) A peptide according to claim 12 that comprises at the most 10 amino acid residues.

Claims 14-16. (Cancelled)

17. (Original) A peptide according to claim 1, which is derived from a native sequence of survivin by substituting, deleting or adding at least one amino acid residue.

18. (Withdrawn) A peptide according to any of the preceding claims, which is phosphorylated.

19. (Withdrawn) A peptide according to claim 18, which comprises Thr34 of the native survivin disclosed in US 6,45,23.

20. (Currently amended) A peptide according to claim 1 comprising, for each specific HLA allele, any of the amino acid residues as indicated in the following table and corresponding to the amino acid positions in SEQ ID NO: 1, SEQ ID NO: 4 and SEQ ID NO:5:

HLA allele	Position 1	Position 2	Position 3	Position 5	Position 6	Position 7	C-terminal
HLA-A1		T,S	D,E			L	Y
HLA-A2		L, M			V		L,V
HLA-A3		L,V,M	F,Y				K,Y,F
HLA-A11		V,I,F,Y	M,L,F,Y I				K,R
HLA-A23		I,Y					W,I
HLA-A24		Y		I,V	F		I,L,F
HLA-A25		M,A,T	I				W
HLA-A26	E,D	V,T,I,L, F			I,L,V		Y,F
HLA-A28	E,D	V,A,L					A,R
HLA-A29		E					Y,L
HLA-A30		Y,L,F,V					Y
HLA-A31			L,M,F,Y				R
HLA-A32		I,L					W
HLA-A33		Y,I,L,V					R
HLA-A34		V,L					R
HLA-A66	E,D	T,V					R,K
HLA-A68	E,D	T,V					R,K
HLA-A69		V,T,A					V,L
HLA-A74		T					V,L
HLA-B5		A,P	F,Y				I,L
HLA-B7		P					L,F
HLA-B8			K	K,R			L
HLA-B14		R,K					L,V
HLA-B15 (B62)		Q,L,K,P H,V,I, M,S,T					F,Y,W
HLA-B17							L,V
HLA-B27		R					Y,K,F,L
HLA-B35		P					I,L,M,Y
HLA-B37		D,E					I,L,M
HLA-B38		H	D,E				F,L
HLA-B39		R,H					L,F
HLA-B40 (B60,61)		E	F,I,V				L,V,A,W,M, T,R
HLA-B42		L,P					Y,L
HLA-B44		E					F,Y,W
HLA-B46		M,I,L,V					Y,F
HLA-B48		Q,K					L
HLA-B51		A,P,G					F,Y,I,V
HLA-B52		Q	F,Y				I,V

HLA-B53	P					W,F,L
HLA-B54	P					
HLA-B55	P					A,V
HLA-B56	P					A,V
HLA-B57	A,T,S					F,W,Y
HLA-B58	A,T,S					F,W,Y
HLA-B67	P					L
HLA-B73	R					P
HLA-Cw1	A,L					L
HLA-Cw2	A,L					F,Y
HLA-Cw3	A,L					L,M
HLA-Cw4	Y,P,F					L,M,F,Y
HLA-Cw6						L,I,V,Y
HLA-Cw6	Y					L,Y,F
HLA-Cw8	Y					L,I
HLA-Cw16	A,L					L,V

21. (Original) A peptide according to claims 1 that is capable of eliciting INF- γ - producing cells in a PBL population of a cancer patient at a frequency of at least 10 per 10⁴ PBLs.

22. (Original) A peptide according to claim 1, which is capable of eliciting INF- γ - producing cells in a PBL population of a patient having a cancer disease where survivin is expressed.

23. (Original) A peptide according to claim 22 where the cancer disease is selected from the group consisting of a haematopoietic malignancy including chronic lymphatic leukemia and chronic myeloid leukemia, melanoma, breast cancer, cervix cancer, ovary cancer, lung cancer, colon cancer, pancreas cancer and prostate cancer.

24. (Original) A peptide according to claim 1, which is capable of eliciting INF- γ - producing cells in a PBL population of a patient having a cancer disease, said INF- γ -producing

cells having cytotoxic effect against survivin expressing cells of a cancer cell line, including a cell line selected from the group consisting of the breast cancer cell line MCF-7 and the melanoma cell line FM3.

25. (Original) A pharmaceutical composition comprising the peptide according to claim 1.

26. (Currently amended) A composition according to claim 25 that comprises a peptide of claim 1 ~~having a sequence contained in native human survivin in combination with~~ comprising a ~~another~~ modified survivin peptide that differs from a peptide which is contained in a native survivin by the presence of at least one substitution, deletion or addition amino acid modification.

27. (Currently amended) A composition according to claim 26 ~~comprising a native survivin peptide having the sequence contained~~ wherein the modified survivin peptide is in SEQ ID NO:36 (FTELTGGEF) ~~in combination with another modified survivin peptide having the sequence contained in~~ and the peptide of claim 1 is SEQ ID NO:14 (STFKNWPFL).

28. (Original) A composition according to claim 25, which is a vaccine capable of eliciting an immune response against a cancer disease.

29. (Withdrawn) A composition according to claim 25, further comprising an immunogenic protein or peptide fragment selected from a protein or peptide fragment not belonging to or derived from the survivin protein family.

30. (Withdrawn) A composition according to claim 29, where the protein or peptide fragment not belonging to or derived from the survivin protein family is a protein, or peptide fragment hereof, involved in regulation of cell apoptosis.

31. (Withdrawn) A composition according to claim 29 where the immunogenic protein or peptide fragment selected from a protein or peptide fragment hereof not belonging to or derived from the survivin protein family is Bcl-2 or a peptide fragment hereof.

32. (Original) A composition according to claim 25, which is a multiepitope vaccine.

33. (Original) A composition according to claim 28 where the vaccine is capable of eliciting an immune response against a cancer disease where survivin is expressed.

34. (Original) A composition according to claim 33 where the cancer disease is selected from the group consisting of a haematopoietic malignancy including chronic lymphatic leukemia and chronic myeloid leukemia, melanoma, breast cancer, cervix cancer, ovary cancer, lung cancer, colon cancer, pancreas cancer and prostate cancer.

35. (Original) A composition according to claim 33 or 34 where the vaccine elicits the production in the vaccinated subject of effector T-cells having a cytotoxic effect against the cancer cells.

36. (Currently amended) A composition for *ex vivo* or *in situ* ~~diagnosis~~ detection of the presence in a cancer patient of survivin reactive T-cells among PBLs or in tumor tissue, the composition comprising a peptide according to claim 1.

37. (Currently amended) A diagnostic kit for *ex vivo* or *in situ* ~~diagnosis~~ detection of the presence in a cancer patient of survivin reactive T-cells among PBLs or in tumour tissue comprising a peptide according to claim 1.

38. (Currently amended) A complex of a peptide according to claim ~~claims~~ 1 and a Class I HLA molecule or a fragment of such molecule.

39. (Original) A complex according to claim 38 which is monomeric.

40. (Original) A complex according to claim 38 which is multimeric.

41. (Withdrawn) A method of detecting in a cancer patient the presence of survivin reactive T-cells, the method comprising contacting a tumour tissue or a blood sample with a complex according to claim 38 and detecting binding of the complex to the tissue or the blood cells.

42. (Withdrawn) A molecule that is capable of binding specifically to a peptide according to claims 1.

43. (Withdrawn) A molecule according to claim 36 which is an antibody or a fragment hereof.

44. (Withdrawn) A molecule that is capable of blocking the binding of a molecule according to claim 42 or 43.

45. (Withdrawn) A method of treating a cancer disease, the method comprising administering to a patient suffering from the disease an effective amount of the composition according to claim 25, a molecule according to claim 42 or a molecule according to claim 44.

46. (Withdrawn) A method according to claim 45 wherein the disease to be treated is a cancer disease where survivin is expressed.

47. (Withdrawn) A method according to claim 46 wherein the cancer disease is selected from the group consisting of a haematopoietic malignancy including chronic lymphatic leukemia and chronic myeloid leukemia, melanoma, breast cancer, cervix cancer, ovary cancer, lung cancer, colon cancer, pancreas cancer and prostate cancer.

48. (Withdrawn) A method according to claim 45, which is combined with a further treatment.

49. (Withdrawn) A method according to claim 48 wherein the further treatment is radiotherapy or chemotherapy.

50. (New) The peptide of claim 17, wherein said peptide is SEQ ID NO:36.